

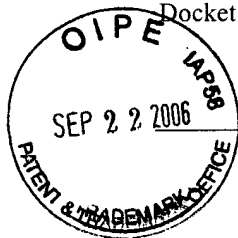
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Docket No.: QSOFT.050A

September 22, 2006

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REPLY BRIEF TRANSMITTAL

Applicant : William Romine, et al.
App. No : 09/713,479
Filed : November 15, 2000
For : SYSTEM AND METHOD FOR QUIESCING
SELECT DATA MODIFICATION OPERATIONS
AGAINST AN OBJECT OF A DATABASE DURING
ONE OR MORE STRUCTURAL OPERATIONS
Examiner : Debbie M. Lee
Art Unit : 2168

Express Mailing Certification

I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated below and are addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on

9-22-06

(Date)

John R. King
John R. King, Reg. No. 34,362

Mail Stop Appeal Brief-Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith for filing in the above-identified application are the following enclosures:

- (X) Reply Brief in ten (10) pages.
- (X) Request for Oral Hearing in one (1) page with filing fee check for \$1,000;
- (X) Return prepaid postcard.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9-22-06

By: John R. King
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Please Direct All Correspondence to Customer Number **20995**

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Confirmation No. : 3574

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9-22-06

(Date)

John R. King
John R. King, Reg. No. 34,302

Mail Stop Appeal Brief-Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 41.41(a)(1), Appellant submits this Reply Brief in response to the Examiner's Answer mailed July 26, 2006.

Pursuant to 37 C.F.R. § 41.47, Appellant respectfully requests an Oral Hearing in this Appeal. This request is also made in a separate paper filed herewith and is accompanied by the fee set forth in 37 C.F.R. §41.20(b)(3).

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I. STATUS OF CLAIMS

Claims 1-11, 19-25, 30, 32-37, 40, 41 and 49 remain pending and are the subject of this Appeal.

In an Amendment Accompanying Appellant's Appeal Brief mailed May 9, 2006, Appellant cancelled Claim 38. Claims 12-18, 26-29, 31, 39 and 42-48 were previously cancelled.

On December 19, 2005, the Examiner finally rejected Claims 1-11, 19-25, 30, 32-38, 40, 41 and 49.

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II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following rejections are to be reviewed on appeal:

1. The rejection of Claims 1, 3-7, 9-11, 19-23, 30, 32-36, 40 and 49 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,519,613 to Friske et al. ("Friske") in view of U.S. Patent No. 6,499,033 to Vagnozzi ("Vagnozzi"); and
2. The rejection of Claims 2, 8, 21, 24, 25, 37, 38, 41 and 49 under 35 U.S.C. § 103(a) as being unpatentable over Friske in view of Vagnozzi and in further view of U.S. Patent No. 6,122,640 to Pereira ("Pereira").

III. ARGUMENT

The claims of the present application are direct to systems and methods for reorganizing a table in a database file while providing clients of the database file continuous access to data stored in the table.

In summary, the invention includes reorganizing data of an original table by copying the data to a reorganized table. During the copying, modifications are allowed to the data of the original table while records of the modifications are collected. When the copying completes, the modifications are applied against the reorganized table.

The invention further includes applying to the original table a first partial lock, or trigger lock, that blocks select data modification operations while allowing other operations against the original table. Any remaining modifications from the collected records are applied against the reorganized table. A second partial (trigger) lock is also applied to the reorganized table to block select data modification operations while allowing other operations against the reorganized table such that the reorganized table remains continuously accessible during the reorganization.

After the second partial lock is applied to the reorganized table, the reorganized table is substituted for the original table such that the reorganized table remains accessible during the substitution. After the substitution, the second partial lock is removed from the reorganized table.

A. Friske and Vagnozzi Do Not Teach or Suggest Applying Two Partial Locks During a Reorganization Process

1. Arguments Raised by Examiner's Answer

The Examiner asserts that the combination of Friske and Vagnozzi discloses applying two partial locks during a reorganization process. In particular, on Page 4 of the Examiner's Answer, the Examiner characterizes Vagnozzi as teaching the following:

Vagnozzi discloses a system to lock out an update operation while allowing any number of other operations, such as retrieval operation, on the table to

process concurrently. . . . Although Vagnozzi teaches “permits fields to be added to the database without having to reorganize the database” (col. 2, lines 63–64), but by the meant of adding new fields to the database, it would be equivalent to the “reorganization” of the database because the structured of the database has been changed with newly added fields.

In the alternative, the Examiner argues on Page 4 of the Examiner’s Answer that if “Vagnozzi inadequately discloses the claimed step of reorganized, the teachings of Friske should remedy such deficiency.” For example, the Examiner states that Friske discloses:

[a] method to reorganize a database that does not prevent other processes from accessing the database while the reorganization is in progress . . . [wherein] a lock is applied to an original table or on a source (col. 3, lines 6–8, et seq), and a reorganized table also lock is in place (abstract, last 3 lines, et seq).

The Examiner then asserts that it would have been obvious to modify Friske with Vagnozzi to teach the claimed invention.

2. Reply to Examiner’s Arguments

Neither Friske, nor Vagnozzi, nor a combination thereof, teaches or suggests applying partial locks to an original table and to a reorganized table during a reorganization process.

a. Vagnozzi

Vagnozzi describes a process for improving the speed of retrieving data (i.e., records) from a database and not the reorganization of a table in a database. In particular, Vagnozzi discloses locking a database to prevent updates to records during a retrieval operation (see, e.g., col. 15, lines 22–38), such as while counting the number of records or finding particular records in the database according to a predefined criteria (see, e.g., col. 14, lines 19–27). Such locking is used to prevent modifications to records while a particular retrieval query is being executed so as to, for example, avoid inaccurate retrieval results.

Vagnozzi does not deal with reorganization and does not teach or suggest applying multiple partial locks on different tables during a reorganization process.

The Examiner's argument that Vagnozzi's locks are applied during a reorganization process appears to be based on a misinterpretation of Vagnozzi. The Examiner relies upon a phrase, which contains the word "reorganize," in the Background of the Invention of Vagnozzi for suggesting that Vagnozzi concerns reorganization. In particular, the phrase relied upon by the Examiner is recited in a paragraph that reads in relevant part (see col. 2, lines 60–66) (emphasis added):

Since, in Waisman et al., the data is stored at the bottom level of a B-tree, consecutively numbered records need not be physically stored together. This permits the use of variable length fields and permits fields to be added to the database without having to reorganize the database or make changes to the database management program that is used to access the data.

This portion of Vagnozzi, however, is describing a database structure of a prior art reference that is being distinguished by Vagnozzi. Vagnozzi proceeds to suggest that retrieving records in such a prior art structure is too complicated and slow because its database records are not physically stored together (see col. 2, line 66 to col. 3, line 6). This portion of Vagnozzi directed to a prior art system in no way teaches or suggests that Vagnozzi concerns a reorganization process in which partial locks are applied to different tables. Rather, as can be seen, this portion of Vagnozzi deals with a reference that appears to disclose a database structure and method for avoiding reorganization in a database.

b. Friske

The Examiner's reliance upon Friske is also improper. Friske appears to disclose a "non-blocking drain" method and apparatus for use in processing requests on a resource. For instance, Friske discloses using a single non-blocking drain to lock a database, copying data from the database and reorganizing the data. The single non-blocking drain

allows other requests on the database from being processed during reorganization except for when the reorganized data replaces the data in the database (see, e.g., Abstract).

While Friske appears to describe a system that reorganizes a database, Friske does not teach or suggest the use of multiple partial locks on multiple tables during reorganization, as was acknowledged by the Examiner on Page 4 of the December 15, 2005 Final Office Action. That is, Friske does not teach or suggest placing a partial lock on an original table and a partial lock on a second (reorganized) table during a reorganization process. Even though Friske applies a non-blocking drain on an original database prior to copying its unorganized data set, Friske discloses that neither the original data set nor the reorganized data set is accessible while the original data set is being replaced by the reorganized data set (i.e., a complete locking of both data sets is performed) (see, e.g., col. 9, lines 16–19; col. 3, lines 40–43; Abstract).

c. Combination of Vagnozzi and Friske

As detailed in Appellant’s Appeal Brief, Appellant also respectfully submits that there is no suggestion or motivation to combine Friske and Vagnozzi to teach or suggest the claimed systems and methods of the present application. For example, Vagnozzi’s system for expediting the retrieval of data from a database is non-analogous to Friske’s system for reorganizing a database.

B. Friske and Vagnozzi Do Not Teach or Suggest Keeping a Reorganized Table Accessible While Substituting the Reorganized Table for an Original Table

1. Arguments Raised by Examiner’s Answer

As indicated on Page 5 of the Examiner’s Answer, the Examiner relies upon Friske “for teaching the claimed limitation of substituting the reorganized table for the original table.” The Examiner then repeats her arguments above by stating:

[A]lthough Vagnozzi teaches “permits fields to be added to the database without having to reorganize the database” (col. 2, lines 63–64), but by the meant of adding new fields to the database, it would be equivalent to the

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“reorganization” of the database because the structured of the database has been changed with newly added fields.

The Examiner then states that it would have been obvious “to modify Friske’s teaching by using the lockout update operation against the database as taught by Vagnozzi to the reorganized table of Friske’s system.”

2. Reply to Examiner’s Arguments

As discussed above, Vagnozzi does not teach or suggest the reorganization of a database, and, thus, in Vagnozzi there is no reorganized table or substitution of a reorganized table for an original table.

Furthermore, Friske clearly states that its database reorganization process requires both the original (unorganized) data set and the reorganized data set to be locked against any modifications during substitution of the reorganized data set for the original data set (see, e.g., col. 9, lines 16–19; col. 3, lines 40–43; Abstract). Thus, neither Friske, nor Vagnozzi, nor a combination thereof, teaches or suggests keeping a reorganized table accessible while substituting the reorganized table for an original table.

C. Friske, Vagnozzi and Pereira Do Not Teach the Claimed Invention

In the Examiner’s Answer, the Examiner does not rely upon Pereira for teaching: (1) applying two partial locks during a reorganization process; or (2) keeping a reorganized table accessible while substituting the reorganized table for an original table. Therefore, for the reasons set forth above, Appellant respectfully submits that the pending claims are also patentably distinguished over the combination of Friske, Vagnozzi and Pereira.

D. Conclusion

In view of the foregoing arguments distinguishing Claims 1–11, 19–25, 30, 32–37, 40, 41 and 49 over the art of record, Appellant respectfully requests that the rejections of these claims be reversed.

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Furthermore, Appellant hereby incorporates the arguments made in Appellant's Appeal Brief mailed May 9, 2006. Appellant's Reply Brief addresses only certain points of argument made in the Examiner's Answer. Failure to address a particular argument made by the Examiner is not an indication that Appellant agrees with the Examiner, but rather means that Appellant stands by its previous argument.

Please charge any additional fees, including any fees for additional extensions of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9-22-06

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